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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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LARSON AND LARSON 11199 69TH STREET NORTH LARGO, FL 33773			EXAMINER ROMAN, LUIS ENRIQUE	
			ART UNIT 2836	PAPER NUMBER

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,991

Applicant(s)

ELDER, KENNETH M.

Examiner

Luis Roman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/22/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: “... ***placed at an angle to one another***” makes the claim indefinite, since an angle can be measured from 0 to 360 degrees to indicate the relative position of any first object respect to a second one. As a result this phrase does not add any further limitation to the claim. Moreover, the following “... ***disposed in close proximity to one another***”, makes also the claim indefinite, since it does not define any measurable distance in engineering terms. As a result this phrase does not add any further limitation to the claim. Appropriate corrections are required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C.102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

102(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, 8 & 15 are rejected under 35 U.S.C. §102(b) as being anticipated by Stahl (US 5,388,021).

Regarding claim 1 Stahl discloses a surge suppression and protection device (Col. 3 lines 52-54) for use with electrical equipment and devices and data communication lines having a first conduction path (Fig. 3 path between elements 11 & 13) and a second conduction path (Fig. 3 path between elements 12 & 14), the surge suppression and protection device comprising:

a) a first coil (Fig. 3 element 23) and a second coil (Fig. 3 element 24) disposed in close proximity to one another, (Fig. 3 element 10<all the elements are included inside the surge suppressor, as a result each element is close to the other) the first coil having a

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first winding, the second coil having a second winding, the first and second windings placed at an angle to one another (they have a measurable angle between 0 to 360 degrees with respect to one another), the first coil connected in series with a first conduction path (Fig. 3 elements 11, 23, 13) and the second coil connected in series with the second conduction path (Fig. 3 elements 12, 24, 14), and b) at least one surge element connected between the first conduction path and the second conduction path (Fig. 3 MOV 17).

Regarding claim 7 Stahl discloses the surge suppression and protection device of claim 1.

Stahl further discloses wherein the multitude of surge elements are chosen from the group consisting of metal oxide varistors, avalanche diodes and gas tubes. (Fig. 3 elements MOVs 20, 21, 22left, 22right, 28, 33, 39, 42).

Regarding claim 8 Stahl discloses the surge suppression and protection device of claim 7.

Stahl further discloses wherein a metal oxide varistor is employed for each of the first and second coils (Fig. 3 elements 21, 20 respectively).

Regarding claim 15 Stahl discloses a surge suppression and protection device (Col. 3 lines 52-54) for use with electrical equipment and devices and data communication lines having a first conduction path (Fig. 3 path between elements 11 & 13) and a second conduction path (Fig. 3 path between elements 12 & 14), the surge suppression and protection device comprising:

a) a first (Fig. 3 element 23) and second (Fig. 3 element 24) coil disposed in close proximity to one another (Fig. 3 element 10<all the elements are included inside the surge suppressor, as a result each element is close to the other), the first coil connected in series with the first conduction path (Fig. 3 elements 11, 23, 13) and the second coil connected in series with the second conduction path (Fig. 3 elements 12, 24, 14), windings of the first coil and windings of the second coil placed at an angle to one

another (they have a measurable angle between 0 to 360 degrees with respect to one another), b) a plurality of metal oxide varistors connected between the first conduction path and the second conduction path (Fig. 3 MOVs 42, 22left, 22right).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action.

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 3, 7, 8, 9, 15, 16 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl (US 5,388,021) in view of Grohel et al. (US 5,565,836).

The following rejections of claims 1, 7, 8 and 15 are separate and alternative rejections based on Stahl in view of Grohel et al.

Regarding claim 1 Stahl discloses a surge suppression and protection device (Col. 3 lines 52-54) for use with electrical equipment and devices and data communication lines having a first conduction path (Fig. 3 path between elements 11 & 13) and a second conduction path (Fig. 3 path between elements 12 & 14), the surge suppression and protection device comprising:

a) a first coil (Fig. 3 element 23) and a second coil (Fig. 3 element 24) disposed in close proximity to one another, (Fig. 3 element 10<all the elements are included inside the surge suppressor, as a result each element is close to the other), the first coil connected in series with a first conduction path (Fig. 3 elements 11, 23, 13) and the second coil connected in series with the second conduction path (Fig. 3 elements 12, 24, 14), and
b) at least one surge element connected between the first conduction path and the second conduction path (Fig. 3 MOV 17).

Stahl does not disclose the first coil having a first winding, the second coil having a second winding, the first and second windings placed at an angle to one another.

Grohel et al. teaches the first coil having a first winding, the second coil having a second winding, the first and second windings placed at an angle to one another (Col. 2 lines 43-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stahl device with the Grohel et al. features because having the appropriate angle the interferences from one coil to another can be diminished and also the impedances the provide a better surge protection and also this configuration of windings help to reduce the Lorentz forces.

Regarding claim 2 Stahl discloses the surge suppression and protection device of claim 1.

Grohel et al. further discloses wherein the first coil first winding is disposed at substantially a ninety-degree angle to the second coil second winding (Col. 2 lines 43-47<if the windings of the first coil is substantially 45 degrees respect to the common axis and the windings of the second coil is substantially -45 degrees the angle between the two windings will be substantially 90 degrees).

Regarding claim 3 Stahl discloses the surge suppression and protection device of claim 1.

Grohel et al. further discloses wherein the first coil first winding is disposed at a non-parallel angle to the second coil second winding (Col. 2 lines 43-47 <making that angle any value but 0 or 180 degrees).

Regarding claim 7 Stahl discloses the surge suppression and protection device of claim 1.

Stahl further discloses wherein the multitude of surge elements are chosen from the group consisting of metal oxide varistors, avalanche diodes and gas tubes (Fig. 3 elements MOVs 20, 21, 22left, 22right, 28, 33, 39, 42).

Regarding claim 8 Stahl discloses the surge suppression and protection device of claim 7.

Stahl further discloses wherein metal oxide varistor is employed for each of the first and second coils (Fig. 3 elements 21, 20 respectively).

Regarding claim 9 Stahl discloses the surge suppression and protection device of claim 1.

Stahl further discloses wherein the electrical equipment and devices are connected to an electrical power line having a phase chosen from the group consisting of single, two and three phase lines (Fig. 3 element 15).

Regarding claim 15 Stahl discloses a surge suppression and protection device (Col. 3 lines 52-54) for use with electrical equipment and devices and data communication lines having a first conduction path (Fig. 3 path between elements 11 & 13) and a second conduction path (Fig. 3 path between elements 12 & 14), the surge suppression and protection device comprising:

a) a first (Fig. 3 element 23) and second (Fig. 3 element 24) coil disposed in close proximity to one another (Fig. 3 element 10<all the elements are included inside the surge suppressor, as a result each element is close to the other), the first coil connected in series with the first conduction path (Fig. 3 elements 11, 23, 13) and the second coil connected in series with the second conduction path (Fig. 3 elements 12, 24, 14), b) a plurality of metal oxide varistors connected between the first conduction path and the second conduction path (Fig. 3 MOVs 42, 22left, 22right).

Stahl does not disclose windings of the first coil and windings of the second coil placed at an angle to one another.

Grohel et al. teaches the first coil having a first winding, the second coil having a second winding, the first and second windings placed at an angle to one another (Col. 2 lines 43-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stahl device with the Grohel et al. features because having the

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appropriate angle the interferences from one coil to another can be diminished and also the impedances the provide a better surge protection and also this configuration of windings help to reduce the Lorentz forces.

Regarding claim 16 Stahl discloses the surge suppression and protection device of claim 15.

Grohel et al. further discloses wherein the windings first coil is disposed at a ninety-degree angle to the windings of the second coil (Col. 2 lines 43-47<if the windings of the first coil is substantially 45 degrees respect to the common axis and the windings of the second coil is substantially -45 degrees the angle between the two windings will be substantially 90 degrees).

Regarding claim 20 Stahl discloses the surge suppression and protection device of claim 15.

Stahl further discloses wherein the electrical equipment and devices are connected to an electrical power line having a phase chosen from the group consisting of single, two and three phase lines (Fig. 3 element 15).

Claims 4, 6, 17 & 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl (US 5,388,021) in view of Akachi et al. (US 4,635,019).

Regarding claim 4 Stahl discloses the surge suppression and protection device of claim 1.

Stahl does not disclose wherein the first coil first winding substantially surrounds the second coil second winding.

Akachi et al. discloses wherein the first coil first winding substantially surrounds the second coil second winding (Col. 2 lines 44-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stahl device with the Akachi et al. features because this arrangement can provide a sufficient insulation breakdown strength between primary

side and the secondary side for satisfying the safety standards. Moreover, it makes the design more compact and less expensive.

Regarding claim 6 Stahl discloses the surge suppression and protection device of claim 1.

Stahl does not disclose wherein the first coil first winding is intertwined with the second coil second winding.

Akachi et al. discloses wherein the first coil first winding is intertwined with the second coil second winding (Col. 4 lines 36-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stahl device with the Akachi et al. features because it has been found from the experimental results that the use of intertwined wires facilitates the improvement of the magnetic coupling and/or the decrease of the leakage inductance, as compared with the case where a single strand wire is used to form the windings.

Regarding claim 17 Stahl discloses the surge suppression and protection device of claim 15.

Akachi et al. further discloses wherein the first coil first winding substantially surrounds the second coil second winding (Col. 2 lines 44-51).

Regarding claim 19 Stahl discloses the surge suppression and protection device of claim 15.

Akachi et al. further discloses wherein windings of the first coil are intertwined with the windings of the second coil (Col. 4 lines 36-47).

Claims 5 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl (US 5,388,021) in view of Newbould (US 4,092,582).

Regarding claim 5 Stahl discloses the surge suppression and protection device of claim 1.

Stahl does not disclose wherein the second coil has a top surface and the first coil is disposed upon the top surface of the second coil separated by a small air space.

Newbould teaches wherein the second coil has a top surface and the first coil is disposed upon the top surface of the second coil separated by a small air space (Col. 2 lines 67-69 & Col. 3 lines 1-6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stahl device with the Newbould et al. features because a ferromagnetic core having an air gap arrangement helps to enhance the flux linkage.

Regarding claim 18 Stahl discloses the surge suppression and protection device of claim 15.

Newbould further discloses wherein the second coil has a top surface and the first coil is disposed upon the top surface of the second coil separated by a small air space (Col. 2 lines 67-69 & Col. 3 lines 1-6).

Claims 10, 11, 12, 13, 14, 21, 22 & 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl (US 5,388,021) in view of Grohel et al. (US 5,565,836) and Crosby et al. (US 4,876,713).

Regarding claim 10 Stahl discloses the surge suppression and protection device of claim 1.

Stahl does not disclose wherein the device is connected directly to an AC electrical receptacle.

Crosby et al. teaches wherein the device is connected directly to an AC electrical receptacle (Figs. 1 & 3 element 30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an enclosure for supporting and protecting the device from environment factors such as light, heat, dust, moisture, to allow devices to be electrically connected to the AC electrical receptacle. This is the simplest way this surge

suppressor can be connected between devices to be protected and an electrical network.

Regarding claim 11 Stahl discloses the surge suppression and protection device of claim 1.

Crosby et al. further discloses wherein the device is completely enclosed within a box having a housing (Figs. 1, 2, 3 element 12 or Figs. 5, 6 element 91).

Regarding claim 12 Stahl discloses the surge suppression and protection device of claim 1.

Crosby et al. further discloses wherein the box comprises an AC plug (Figs. 1 and 3 element 30) mounted on a back side of the housing for inserting within an AC receptacle of a power line and at least one AC receptacle (Figs. 5 and 6 elements 93) mounted on the box housing such that it is accessible for receiving a plug of an electrical device.

Regarding claim 13 Stahl discloses the surge suppression and protection device of claim 12.

Crosby et al. further discloses wherein the box further comprises a switch (Figs. 5 & 6 element 108) mounted on the housing for providing an on/off toggle for the surge suppression and protection device.

Regarding claim 14 Stahl discloses the surge suppression and protection device of claim 1.

Neither Stahl nor Grohel et al. discloses wherein the box comprises a plurality of terminals for hard-wiring electrical equipment or devices or data communication lines directly to the surge suppression and protection device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Stahl and Totsuka et al. to additionally provide a plurality of terminals for hard-wiring electrical equipment or devices or data

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communication lines directly to the surge suppression and protection device for connection to sensitive electrical devices which require protection at all times. A permanent connection provided by hardwiring would provide enhanced reliability for this particular connection.

Regarding claim 21 Stahl discloses the surge suppression and protection device of claim 15.

Crosby et al. further discloses wherein the device is completely enclosed within a box having a housing (Figs. 1, 2, 3 element 12 or Figs. 5, 6 element 91).

Regarding claim 22 Stahl discloses the surge suppression and protection device of claim 21.

Crosby et al. further discloses wherein the box comprises an AC plug (Figs. 1 and 3 element 30) mounted on a back side of the housing for inserting within an AC receptacle of a power line, at least one AC receptacle (Figs. 5 and 6 elements 93) mounted on the housing such that it is accessible for receiving a plug of an electrical device), and a switch (Figs. 5 & 6 element 108) mounted on the housing for providing an on/off toggle for the surge suppression and protection device.

Regarding claim 23 Stahl and Totsuka et al. discloses the surge suppression and protection device of claim 1.

Neither Stahl nor Grohel et al. discloses wherein the box comprises a plurality of terminals for hard-wiring electrical equipment or devices or data communication lines directly to the surge suppression and protection device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Stahl and Totsuka et al. to additionally provide a plurality of terminals for hard-wiring electrical equipment or devices or data communication lines directly to the surge suppression and protection device for connection to sensitive electrical devices which require protection at all times. A

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permanent connection provided by hardwiring would provide enhanced reliability for this particular connection.

Response to Arguments

Applicant's arguments have been given carefully consideration but they are now moot in view of new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272 – 5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

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Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LR/011706

Luis E. Román
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